

NAME OF PERFORMING ORGANIZATION NAVAL HOSPITAL CAMP PENDLETON, CALIFORNIA ADDRESS (City, State, and ZIP Code)		6b. OFFICE SYMBOL (If applicable)		7a. NAME OF MONITORING ORGANIZATION U.S. ARMY-BAYLOR UNIVERSITY GRADUATE PROGRAM IN HEALTH CARE ADMINISTRATION	
NAME OF FUNDING / SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
ADDRESS (City, State, and ZIP Code)		10. SOURCE OF FUNDING NUMBERS			
		PROGRAM ELEMENT NO.		PROJECT NO.	TASK NO.
				WORK UNIT ACCESSION NO.	
TITLE (Include Security Classification)					
IMPLEMENTING TOTAL QUALITY LEADERSHIP IN NAVAL HOSPITAL CAMP PENDLETON USING DEMING'S 14 PTS					
PERSONAL AUTHOR(S) BRANCO, PATRICK JOSEPH					
1. TYPE OF REPORT FINAL		13b. TIME COVERED FROM 7-90 TO 7-91		14. DATE OF REPORT (Year, Month, Day) 1991 MAY 22	
				15. PAGE COUNT 127	
SUPPLEMENTARY NOTATION					
COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	TOTAL QUALITY LEADERSHIP, TQL		
			TOTAL QUALITY MANAGEMENT, (TQM)		
			MANAGEMENT		
ABSTRACT (Continue on reverse if necessary and identify by block number)					
<p>The purpose of this study was to develop a Total Quality Leadership (TQL) implementation model for Naval Hospital Camp Pendleton using the conceptual framework of Dr. W. Edwards Deming's Fourteen Points of Management. The model's foundation is built upon an exhaustive literature review. A description of the associated philosophic tenets, as they relate to the transformation occurring at the Naval Hospital, is examined under each element of the Fourteen points. With a theme of responsiveness to meeting the needs of the internal and external customers, the model describes the present and future changes contemplated at the Naval Hospital for the successful implementation of TQL. The model seeks to optimize the Naval Medical Quality Institute's philosophies and may assist other Department of Defense healthcare facilities in overcoming some implementation barriers. The model addresses health care organization TQL implementation methods including: management structure for TQL; training requirements; and continuous process improvement.</p>					
DISTRIBUTION / AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION		
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**Implementing Total Quality Leadership
Within Naval Hospital Camp Pendleton
Using The Fourteen Points of Dr. Deming's Philosophy**

A Graduate Management Project
Submitted to the Faculty of
Baylor University
in Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration
by
Lieutenant Patrick J. Branco, MSC, USN
December 1991

Running Head: Implementing TQL

93-04758



Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

93 3 4 130

Acknowledgements

Any quality research project of this magnitude, in the limited time allotted, would be nearly impossible, if not for the assistance of family, friends, faculty, classmates, and co-workers. The researcher wishes to express his most sincere thanks to the following individuals.

Captain Frederick F. Briand, Medical Service Corps, U. S. Navy, for his unending support of the research project from its onset to its conclusion. He guided the researcher over many organizational hurdles, provided valuable supporting documentation and stimulated productive thought processes during the entire project. Additionally, as a practitioner of the lost art of mentorship, he broadened my knowledge base by providing an experiential setting in which to apply my academic learning.

Lieutenant Mary Medina, for providing guidance and direction throughout the project as well as providing a profusion of research literature.

Last, but most important, my family. Vicki, for assisting with reading endless drafts of the research project, and most of all, for providing the love, understanding, and support throughout the entire academic endeavor so necessary for success.

Joseph and Michael, for sacrificing their time demands on the researcher to allow the completion of the research within the established time allotment.

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Abstract

The purpose of this study was to develop a Total Quality Leadership (TQL) implementation model for Naval Hospital Camp Pendleton using the conceptual framework of W. Edwards Deming's Fourteen Points of Management. The model's foundation is built upon an exhaustive literature review. A description of the associated philosophic tenets, as they relate to the transformation occurring at the Naval Hospital, is examined under each element of the Fourteen Points. With a theme of responsiveness to meeting the needs of the internal and external customers, the model describes the present and future changes contemplated at the Naval Hospital for the successful implementation of Total Quality Leadership. The model seeks to optimize the Naval Medical Quality Institute's philosophies and may assist other Department of Defense healthcare facilities in overcoming some implementation barriers. The model addresses health care organization TQL implementation methods including: management structure for TQL; training requirements; and continuous process improvement.

Introduction

Throughout this graduate management project the terms Total Quality Management (TQM) and Total Quality Leadership (TQL) may be used interchangeably. The fundamental origin is the same for both concepts, however, TQL has become the Navy's adopted approach and represents a heightened focus on leadership as the means of achieving organizational excellence. TQM will be used in reference to the quality movement in general, while TQL will be used in all cases dealing with the Navy, Naval Medical Department, and Naval Hospital Camp Pendleton throughout this project. Total Quality Management is best defined as a quality improvement effort to understand the needs and expectations of customers and to search for means in order to better meet these needs (Naval, 1989). The process is proactive not reactive. It relies on prevention of errors rather than the correcting of errors. Total Quality Leadership embraces these ideals but focuses on the leadership required to achieve them. TQL may best be described by the word "kaizen". In 1986,

Imai described kaizen as the progressive and continuous objective of making little things better in order that higher standards of excellence may be established. The success of kaizen relies on solid leadership ideals and practices.

The Japanese, world leaders in the concepts and practice of Total Quality Management, have not implemented TQM in their hospitals. The inability of the Japanese to successfully implement TQM in their health care environment may make it unreasonable to expect that Americans will be able to accomplish the task. The highly complex world of military health care may prove prohibitive to the implementation and utilization of TQM (Laffel, 1991). TQM was originally developed as a management approach for use in manufacturing industries and has only recently been pursued in the service industries. The nucleus of health care must be quality. However, health care has typically lagged a decade behind other industries in new management approaches. As with other industries, the predominant concern in the healthcare marketplace over the last decade has been cost. The purchasers of

health care have had little ability to differentiate between health care providers based solely on the quality of care provided. Frequently the consumers of health care equate quality to low cost and little or no adverse outcomes. During the past several years, Total Quality Management has emerged as a major trend in the comprehensive management of healthcare organizations in the United States. The philosophy of constant quality improvement is being adopted by these healthcare organizations as the new management doctrine for the 1990s and beyond. It appears that TQM may permanently reshape the style and function of health care administration. To date, the successes recorded in the health care industry have been limited only by slow progress. The process of change requires the commitment of time. Successes in TQM are achieved slowly at the start and pick up momentum as the transformation encompasses the entire organization. (Evans, 1990)

In the spring of 1989 the Surgeon General of the Navy, Vice Admiral (VADM) Zimble, invited the Commanding Officers of his Naval Hospitals to

Washington to attend a briefing on Total Quality Management. At that time VADM Zimble stated his commitment to seeing Navy Medicine take the forefront in Total Quality Management. The Commanding Officers carried the philosophy back to their hospitals and began the transformation.

The managers of health care organizations face an era of change. Traditional approaches to hospital management are proving unsuccessful, as evidenced by the growing number of hospitals failing to maintain a niche in the marketplace and finally being forced to close their doors. The traditional perception of the customers of military medicine has been that of an awesome bureaucracy more interested self-sustainment than in meeting the needs of customers. A captive patient population, frequently geographically and certainly economically, virtually assured the military hospital of being the "only game in town." Patient's choices were severely limited and their needs and expectations were generally discounted. As a result, military hospitals adopted an attitude of complacency.

The leaders in Navy medicine recognize that the

attitude of complacency must change. Budget constraints, increased regulatory statutes, changing standards of practice, and a much better informed consumer have combined to have a dramatic effect on health care within the Navy. The mandate for Navy Medicine is clear: improve the quality of health care delivered to our patients, reduce the costs associated with poor management, and become responsive to the needs and expectations of the customers we serve. The solution is upon our doorsteps in the form of Total Quality Management and only requires a comprehensive plan to implement it and the commitment of leadership.

Problem Statement

The traditional approaches to health care management, such as "Management By Objective" and others, have been unable to maintain pace with the rapid environmental and social changes in medicine today. The public outcry for high quality health care at affordable costs demands a paradigm shift in the management philosophy of health care organizations (Berwick, 1989; Merry, 1990). Today, the health care consumer is sophisticated, demanding, and more educated than ever before. This new consumer has alternatives, a variety of hospitals, outpatient services, centers for holistic health and the like. If Navy Medicine is to survive, the customer must choose it on the basis of quality and responsiveness over other alternatives discounting the possibility of mandatory enrollment. The public no longer idolizes the health care organizations or the caregivers; they now hold negative stereotypes and low expectations. A new reality must be created which shows the hospital's continued concern for helping people as well as its need for fiscal

survival. Navy medicine must back up its clinically excellent health care with an intense effort to satisfy our customers by strengthening our caring attitude and improving job satisfaction and self-esteem of all our employees.

The problems which must be overcome to implement TQL in Navy medical treatment facilities are extensive: health care costs related to developing and acquiring new technologies are rising dramatically; while verbally committed to TQL, there has yet to be a commitment of resources by the Department of the Navy to implement Total Quality Leadership; there is a degree of uncertainty among senior military management as to the efficacy of implementing TQL; the industrial application of TQL may not be suitable for unchanged use within military medicine; and current leadership may not fully recognize changes required to fully adopt TQL as a way of life in its' mission and values.

Implementation of a TQL program within Naval Hospital Camp Pendleton requires a formal plan built upon a solid foundation of quality principles and a dedication to continuous quality improvement in every

phase of hospital operation. The eventual success of the plan will rely on the standard bearers who will carry the message of TQL throughout the hospital to enable the transformation to occur.

Literature Review

The Deterioration of the American Economy

What happened to the industrial might of the United States in the past few decades? The land of unlimited resources and technological superiority is failing in the international marketplace (Deming, 1986). What countries are establishing themselves as the new order in industrial power, Japan and Germany? In 1945, each of these countries was decimated by war and yet during their respective reparations have emerged as giants. Did American grow complacent in its role as a world exporter of goods or did Americans fail to recognize the time for growth and change? In the case of Japan, is it a cultural difference in work ethics?

Dr. W. Edward Demings would argue that there is no substantial moral, cultural, or social differentiation which could account for the disparity. Instead, the dissimilarity is attributable to different management techniques practiced in Japan and the United States

(McDaniel, 1990). The view of Dr. Deming is intriguing considering the fact that Dr. Deming, an American statistician, and several of his colleagues were particularly potent in transforming the image of Japan's commercial products from objects of junk to products of excellent quality (Deming, 1986; Walton, 1986). The influence of Dr. Deming in Japan led that country toward a philosophy of commitment to Total Quality Management (Imai, 1986).

Origins of Total Quality Management Thought

During the 1980s, concerns about American competitiveness steered many U.S. companies to a new interest in quality. Most were likely to be introduced to quality concepts by one of the three leading "quality prophets" - W. Edward Demings, Joseph Juran, or Philip Crosby. Each was an active consultant, lecturer, and author, with years of experience. Demings and Juran were in their eighties, and had been enormously influential in Japan; Crosby was in his sixties, and had worked previously at ITT as vice

president of quality. Each of the three had developed his own distinctive approach to quality management.

W. Edward Demings was widely credited with leading the Japanese quality revolution. The style of management described by Deming was not warmly received by businessmen in the United States (Doherty, 1990). Leaders of industry in post-World War II Japan learned of the management philosophies and invited Mr. Deming to Japan to assist in rebuilding her industry and nation. In the subsequent 30 years, Japan's use of TQL has shown that a quality focus by management continually results in increases in the quality of products produced, reduction of production costs, and increases in profits (Deming, 1986; Walton, 1986). The Japanese began to heed his advice on statistical process control and problem solving techniques in 1950. The Japanese manufacturers transformed their industry in less than two decades. The phrase "Made in Japan" shifted in connotation from a label identifying inferior workmanship to a banner of excellence (Ishikawa, 1985). However, it was another 30 years before American businesses began to respond. By then,

Deming's message to managers was blunt:

"The basic cause of sickness in American industry and resulting unemployment is failure of top management to manage. Everyone doing his best is not the answer. It is necessary that people know what to do. Drastic changes are required. The responsibility for change rests on management. The first step is to learn how to change,"
(Deming, 1982, p. i).

Joseph Juran's impact on Japanese quality was usually considered second only to Deming's. At 82, he had enjoyed a varied and distinguished career, including periods as a business executive, government administrator, lecturer, writer, and consultant. He established the Juran Institute in 1979 to serve as a base for seminars, consulting, conferences, and videotapes long associated with his name. Juran's concept of quality is defined as "fitness to use", meaning that the users of a product or service should be able to count on it for what they needed or wanted to do with it. Fitness for use has five major

dimensions: quality of design, quality of conformance, availability, safety, and field use (Juran, 1988).

Philip Crosby started in industry as an inspector; eventually he rose through the ranks at several companies to become vice president of quality at ITT. In 1979, he left ITT to found Philip Crosby Associates, Inc. and the Crosby Quality College. Crosby's message was directed at top management. He sought to change their perceptions and attitudes about quality. Typically, top managers viewed quality as intangible. Crosby, however, spoke of quality as conformance to requirements and believed that any product that consistently replicated the design specifications was of high quality (Crosby, 1979).

Through the work of these, and other pioneers in quality, American industry has found itself on the brink of a management revolution. The mandate is clear, in simplest terms: become competitive through quality or lose world markets by holding steadfast to an antiquated and ineffective management style (Gibson, 1987).

Recognizing the Need for Change

Once considered the manufacturers of the finest watches on Earth, the Swiss controlled a vast portion of the marketshare. Silently, and some say blindly, the market shifted inexorably away from the Swiss. They had failed to recognize a change in the market and react accordingly to it. The Japanese gained a lion's share of the market through the manufacture of high quality, low cost digital watches while the Swiss failed to believe that their customers would purchase these and not the high quality, high cost Swiss analog watches. Their failure to react to the needs and desires of their customers has doomed the Swiss watch industry (Laffel, 1991).

The American health care industry faces a situation similar to that of the Swiss watch makers. The legislative, economic, and social changes in America have placed the health care delivery system in a precarious predicament. Hospitals have begun failing at an alarming rate, due primarily to the fact that they have been unable to adapt to their changing

environment. Regardless of the causes, the threat of fiscal failure has sent managers in search of management techniques to equip them to handle the changes. These managers have begun to look to the Japanese management philosophy as the solution (Fifer, 1990).

The Total Quality Management Philosophy in Healthcare

The philosophical framework for TQM in healthcare is founded upon several key principles: achieving the standards, standards of quality are based on fact (technical, functional, or professional standards), or quality in perception (perception of customers served); zero defects, an error or defect is anything which is contrary to the established quality standards, errors may relate to structure, process, or outcome (Donabedian, 1987). Errors cost money, and the correction or resolution of errors cost money. The reduction of errors in processes and outcomes is considered quality improvement (Crosby, 1979). Preventive management is the prospective approach to

anticipating errors and taking steps to avoid them. Preventive management involves such areas as measurement of quality performance and accepting individual ownership. For quality improvements to meet their full potential, everyone in the healthcare organization must feel an individual sense of ownership - caring, pride, and involvement.

The Improvement Cycle

Consolidating Dr. Deming's fourteen points into a planned program of action is best represented by improvement cycle known as the PLAN, DO, CHECK, ACT (PDCA) approach. The original design was developed by Walter Shewhart and later popularized by Dr. Deming. The PDCA cycle works on a continuum and is most often depicted as a circular diagram in which each of the four elements occupies a quadrant. Each element of the cycle leads to the next element in a continuous cycle (Deming, 1986; Walton, 1986; Doherty, 1990).

In expanding the original PDCA cycle, the Hospital Corporation of America (HCA) was able to detail

additional elements which serve the planning function. Specifically, the acronym "FOCUS" was added and becomes now the "FOCUS PDCA":

Finding a process in need of improvement

Organize teams of employees that understand process

Clarify the current knowledge of the process

Understand the causes of process variation

Selects a process improvement strategy

Plan for carrying out the selected improvement

Do the improvement decided upon

Check that action actually improved process

Act on the gain in quality improvement

Once these steps have been accomplished, a succinct definition of the problem and a statement of improvement objectives may be developed (HCA, 1990; NMQI, 1990). The Navy Medical Department has been authorized to adopt the FOCUS PDCA cycle for internal use (NMQI, 1990).

Total Quality Management in the United States

The use of TQL in the corporate sector has expanded in recent years: Ford, Motorola, Corning, and Dupont to name a few. Ford Motors credits its TQL program for a significant reduction in operating costs (Peters 1987). Over the five year period in which TQL has been practiced at Ford, the operating costs have decreased by \$4.5 billion per year, or the equivalent of \$12 million per day. During this same period Ford was able to increase its market share by 20%. For the first time in 62 years Ford actually surpassed General Motors in profitability in 1986 (Peters, 1987; O'Hallaron, 1989).

The success at the Ford Motors is only one example of Total Quality Management achievement. These achievements are mirrored in many other organizations throughout the country and involve nearly every industry. Not all of the success stories are limited to manufacturing industries, there is a growing trend to incorporate Total Quality Management into service industries such as hotels and hospitals.

**Adoption of the Total Quality Management Philosophy by
the Medical Industry**

America has taken the lead in bringing TQM to the service industries. The Japanese, leaders in the concepts and practice of Total Quality Management, have not implemented TQM in their hospitals. Health care has historically followed other industries in new management approaches by ten years or more. As with other industries, the dominant issue in the healthcare marketplace over the last decade has been price. It is generally agreed this is so, at least in part, because the purchasers of health care have little ability to differentiate health care providers based solely on quality factors.

During the past several years, Total Quality Management has emerged as a major trend in the comprehensive administration of healthcare organizations in the United States. The philosophy of constant quality improvement is being adopted by these healthcare organizations as the new management doctrine

for the 1990s and beyond. It appears that TQM will permanently change the form and function of health care administration. To date, however, there have been only a small number of successes recorded in the health care industry (Berwick, 1989).

TQL is a process aimed at achieving maximum employee efficiency and productivity and in turn customer satisfaction. At the health care level, there are nine essential steps described by Thomas O'Donovan in 1990: 1) top management must be committed to quality and actively prove their commitment; 2) an orientation to meeting the needs of the customer must permeate the organization; 3) team work is essential; 4) training must be provided at all levels; 5) accountability for quality improvements must be tied to managers performance evaluations; 6) quality improvements are rewarded through recognition and incentive programs; 7) quality standards must be set in all programs; 8) obstacles to quality improvements must be eliminated; and 9) personnel must be motivated to improve quality on a permanent basis. (O'Donovan, 1990)

The success stories of TQM in health care are

gradually beginning to emerge. For example, The Veteran's Administration Hospital in Kansas City initiated a quality improvement program in association with the implementation of a new management information system. The system scrutinizes and references data that provided quality assurance personnel with information never before accessible. The information obtained enabled the quality assurance personnel to cross-reference cases and discover minute trends of poor medical procedures. The results of the program have led to a demonstrable 20% reduction in mortality from 1986 through 1988 and an overall reduction of length of stay by 15% (DVA, 1989).

Long-term, objective analysis of TQM programs within the health care industry is difficult to obtain due to its relatively infrequent use in this country. There is, however, a notable absence of analysis of economic issues and concerns associated with the implementation of a TQM program. Additionally, there are virtually no journal articles describing TQM failures. Will TQM provide answers and solutions to all management issues? The answer can only be

determined after an adequate period of time, as the American adoption of Total Quality Management is still in its' infancy.

TQM Evolution in the Department of Defense

Beginning in the early 1980s, the Department of Defense (DoD) began exploring the possibility of using TQM as a means to improve quality. After some initial applications in material support and logistics, TQM has become one of DoDs primary initiatives. The Navy was one of the first to take an active stance in implementation of TQM (NARF, 1986). The first Navy organization to successfully use TQM was the Naval Air Rework Facility at San Diego (NARF SD Case Study 53, 1986).

From 1980 to 1984 the Naval Air Rework Facility trained their people and implemented Deming's concepts of Total Quality Management into their work environment. Since then their TQM program has grown from an idea on paper to three Quality Management Boards and 11 Process Action Teams that are fully

functional and solving problems throughout the facility. (NARF SD Case Study 53, 1986)

The adoption and success of TQM by a growing number of American manufacturers caught the attention of the former Secretary of Defense Carlucci (Carlucci, 1988). Under his direction, the DoD began investigating TQM to determine if these management methods could be adopted for use by the DoD. In 1988, Secretary of Defense Carlucci stated that "my ultimate goal is the satisfied, fully-ready, quality equipped, quality-supported soldier, sailor, airman, and marine" (Carlucci, 1988). To achieve his goal, the Secretary directed implementation of TQM throughout the military. A master plan was developed for the eventual implementation of TQM throughout the uniformed services, as well as for organizations which hold defense contracts. The master plan provided general guidance and milestones but lacked specificity on institutional implementation, manpower utilization in pursuit of program guidelines, and budgetary considerations for changes necessary. (DoD TQM Master Plan, 1988).

Purpose Statement

The purpose of this project is to develop a comprehensive plan for implementing a Total Quality Leadership program at Naval Hospital Camp Pendleton. The philosophy of Total Quality Management dictates a leadership commitment meeting the needs of an organization's customers, producing a higher quality product, and reducing production costs. In theory these philosophies seem ideally suited for application in the health care industry.

The infrastructure of the model to be developed relies on the principles described by W. Edward Demings in 1986. The goal is to develop a model program through which the Naval Hospital may achieve Total Quality Leadership. Dr. Demings teaches a philosophy of Total Quality Management while the Navy has modified the theme to reflect Total Quality Leadership. The essential differences between the two are simply stated as TQM focuses on an organization-wide management view while TQL focuses on those elements of leadership necessary to achieve the organization-wide view.

Accomplishment of this goal will require expansion beyond the teachings of Dr. Demings to meet the specific needs of this facility. The final product of this project will be a document which fully diagrams the implementation process for making TQL a way of life at Naval Hospital Camp Pendleton. The document will describe the philosophy and foundation for the cultural change; delineate the educational requirements necessary for full adoption; and specify the long range strategic course required to fully implement TQL.

Methods and Procedures

For a study of this type to succeed and provide useful information upon which the organization may build we will need as its' foundation, an extensive and exhaustive review of the literature. The volume of literature on the subjective is considerable but few authors have ventured into the mechanics of a planned and systematic approach of implementation of a Total Quality Leadership program. This is largely due to the great variety in organizational missions, goals, and values, as well as the existing organizational cultures. Any successful Total Quality Leadership program must be specifically adapted to the particular organization to meet the subjective needs.

In developing a model for the effective implementation of Total Quality Leadership at the Naval Hospital Camp Pendleton, the following framework of methods and procedures will be used during the project:

Training: One of the first endeavors faced in the implementation of the strategic plan is the early identification and training of key hospital staff in

TQL philosophy. The training phase will follow a comprehensive plan in itself to ensure an incremental distribution of the TQL philosophy throughout the organization. Training in the TQL methods requires a commitment to customer-orientation for all staff of the hospital and the training should plan according to the specific group being trained. Following awareness training at all levels a program for training facilitators must be pursued to assist the various process action teams which will begin the process of continuous quality improvement. And finally, training in statistical process control would be conducted on a just-in-time basis. That is, once a process has been identified which is in need of improvement and a course of action has been established which will produce data for analysis is the time to begin training in statistical technique which enable the leadership of the Naval Hospital to address the conditions by which variance may be controlled and improvement achieved. Training conducted too far in advance of actual usage of the skills learned often results in a deterioration of those skills.

TQL Reference Library: The establishment of reference resource center on Total Quality Leadership material will enable all employees to avail themselves of the full range of texts, articles, audio and video tapes on the subject. Additionally, the key members of the staff would require reference material immediately available to them.

Networking and Interviews: Establishing and maintaining relationships with individual Total Quality Leadership Coordinators (in both civilian and military organizations and both health care and industrial backgrounds) would represent a mechanism for developing valuable information networks to share experiences in overcoming obstacles and attempting innovative approaches.

Membership in the Southern California Coalition for Improving Health Care Quality may be viewed as exceptionally beneficial in a number of ways. The Coalition consists of some 24 civilian health care organizations and a half dozen military medical facilities in the Southern California region. The Coalition has recently begun receiving national

attention for its' non-competitive, open exchange of health care quality information between civilian and military health care organizations. In addition to the opportunities to share information, concerns, and advice with other Total Quality Management Coordinators, the Coalition sponsors four management seminars on Total Quality Management each year. The members of the Coalition serve as presenters, moderators, and facilitators and have access to a number of noted speakers in TQM. Dr. Glenn Laffel of Brigham & Women's Hospital in Boston was recently a guest speaker, and offered an insightful perspective on successful implementation of Total Quality Leadership in a healthcare setting. Brigham and Women's Hospital is one of the principle participants in the Harvard Demonstration Project on Total Quality Management in Healthcare.

Performance Measurement/Improvement Milestones:

Recognition and incentive programs must be established to reward quality improvements. Quality specifications must be installed in every part of the hospital. Barriers to quality improvements must be eliminated and

employees must be sufficiently motivated to continuously seek to improve quality. Measurement of these and other factors associated with implementation of Total Quality Leadership into a hospital environment are imperative in the success of the program. Measurement may be achievable with existing survey instruments or may be developed to meet the specific need.

Results

Total Quality Leadership represents an organizational and individual commitment to the fundamental mission of providing quality care to patients, a quality work environment to employees, and the shared values of each. Implementation of a TQL project requires considerable effort and must be tailored specifically to meet the needs of each separate facility.

Little emphasis in the literature reflects the specific techniques or practices used by organizations to successfully implement TQL within health care

facilities. There are no ready-made cookbook recipes for the establishment of a Total Quality Leadership program which meets the needs of all users.

Information on successful techniques, failed attempts, difficulties encountered in training, and strategic planning initiatives are relatively unexplored. Any organization considering implementation of TQL would find utility in information in these regards. Naval Hospital Camp Pendleton is at the beginning stages of developing a strategic plan for the implementation of Total Quality Leadership. An analytic examination and reporting of the process would prove valuable to other Department of the Navy medical treatment facilities. The value could extend to DoD facilities and Veteran's Administration facilities. The core aspects would have applicability in most civilian health care facilities as well.

The ultimate goal of this study, and of the Naval Hospital, is to see the transformation of this facility into a model of responsiveness to the needs and expectations of our customers. Through perceptive planning and dedicated implementation the objective of

Total Quality Leadership may be achieved and may become the philosophic ideal in the management of all healthcare organizations.

Discussion

Implementing Total Quality Leadership in Naval Hospital Camp Pendleton Using the Fourteen Points of Deming's Philosophy

The conceptual framework utilized in developing the implementation plan for Total Quality Leadership at the Naval Hospital is founded upon the fourteen points of Dr. W. Edwards Deming's philosophy. Each element of the fourteen points will be addressed separately as they pertain specifically to the implementation of TQL at the Naval Hospital.

Dr. W. Edwards Deming's management principles have been successfully used in certain areas of the U. S. Navy since 1984 and have been the center of considerable attention over the past few years in the private sector, including healthcare organizations. A thorough review of the success of these efforts and of recent quality improvement literature suggests that a customer orientation and emphasis on quality improvement should serve as the primary means for

organizational success.

The implementation plan and organizational infrastructure described in the next few pages reflect the attitudinal, strategic planning, and organizational philosophy changes necessary to refashion the organizational culture of Naval Hospital Camp Pendleton to one which emphasizes continuous quality improvement and Total Quality Leadership.

Adopting Total Quality Leadership in an organization is difficult. Joseph Juran, one of the leaders in the field of quality control, estimates that it would take a minimum of six years for continuous quality improvement to take hold while Dr. Deming predicts the process would take no less than a decade.

No substantive change can occur without some sense of need. The Naval Hospital Camp Pendleton currently enjoys an excellent reputation throughout the community we serve. If we are successful today, why do we need to embark on such a difficult journey? Because despite our best efforts at providing quality healthcare to all beneficiaries, a growing number of our patients have found difficulty in attaining access to the system and

may decide to seek their healthcare elsewhere. Our previous status of existing in a relatively competition-free environment is changing. The consumers of healthcare today are far more educated in healthcare and have expectations of the manner and type of care they will receive. As with private healthcare organizations, our revenue (Congressionally authorized budget) relies inseparably upon the amount and type of patients we treat. A level of tension has crept into the organization in our attempts to understand and respond to the needs of our customers. Deming argues that without tension and without a vision of a better future, Total Quality Leadership is simply too difficult to flourish.

According to Deming (1982), when top management considers adopting a quality management program they need to address fourteen specific points. Understanding these points is an essential first step in achieving successful implementation within the organization. Deming acknowledges that adaptation of the philosophy is never easy, but feels that what management can accomplish using the fourteen points is

so enormous compared with following the same management practices we have to date.

Successful implementation of Total Quality Leadership will require a planned and systematic approach and may best be illustrated using Ishikawa's Cause and Effect Diagram as seen in figure 1.

Insert Figure 1 about here

While typically used to examine or brainstorm over issues in which a problem exists and searching for the causes, the Ishikawa Cause and Effect Diagram can be used to arrive at a desired outcome, such as quality and productivity. Effective implementation of Total Quality Leadership using the management principles embraced by Dr. Deming would require a structure similar to this.

The following pages represent the philosophic and practical conditions necessary to the comprehensive and successful implementation of Total Quality Leadership

at the Naval Hospital Camp Pendleton. The essential elements have been categorized according to their congruence with the Fourteen Management Principles of Dr. W. Edwards Deming. The implementation course adopted by Naval Hospital Camp Pendleton in reference to the Fourteen Points is built upon a consolidation of the teachings of a variety of authorities, including the works of Joseph Juran, Phillip Crosby, Maria G. Naval, Donald M. Berwick, and upon the successes attained by groups such as the Hospital Corporation of America, the Navy Personnel Research and Development Center, and the Naval Medical Quality Institute.

Point I. Create constancy of purpose for service improvement, allocating resources to provide for long-range needs rather than short-term profitability.

The significance of establishing long term goals is necessary if hospitals are to prevail. Creating constancy of purpose is, perhaps, the single most important task because it specifically addresses the leader's role in transforming the organizational

culture towards a common goal. Deming, in 1982, expressed the point that companies which seek profits in the short term rather than strategic planning for the long term survival will eventually fail. For the Naval Hospital to survive and prosper requires careful, long-term planning to realize the transformation towards Total Quality Leadership.

To succeed in reorganizing the hospital towards a Total Quality Leadership philosophy the organization must establish its organizational vision, mission statement, and define values and goals. Over a period of three months the Executive Steering Committee (see "Structuring for TQL" section) worked to develop a future vision of the organization and to translate it to a written document of mission statement, goals, and guiding principles. The elemental framework for the Naval Hospital Camp Pendleton's guiding principles, goals, and mission statement were based on the work established and publish by the Naval Medical Quality Institute on behalf of the Surgeon General of the Navy.

Each of the documents is reproduced below:

Navy Medical Department Mission:

WE ARE the Medical Department of the United States Navy.

OUR MISSION is to ensure the health of our Sailors and Marines so that they are physically and mentally ready to carry out their worldwide mission.

WE WILL ACCOMPLISH this with a comprehensive health promotion program and, when illness or injury intervenes, restore optimal health.

WE WILL STRIVE CONTINUALLY to provide this same level of quality healthcare services to the families of active duty members and to all others entrusted to our care.

Naval Hospital Camp Pendleton Mission Statement

We are a military community hospital dedicated to quality healthcare for eligible beneficiaries and to the provision of graduate medical education.

How we accomplish our mission is as important as the mission itself. Fundamental to the success of our hospital are our guiding principles.

Navy Medical Department Guiding Principles:

WE ARE the Medical Department of the United States Navy

WE EXIST to ensure the best physical and mental health of the men and women of the United States Navy and Marine Corps.

WE WILL Support the combat readiness of the Navy and Marine Corps.

Care for all persons as unique human

beings worthy of our courtesy, compassion, and respect.

Earn the trust and confidence of our patients by enthusiastically providing prompt access to quality healthcare.

Attend to the medical needs of the families of our active duty members, our retirees and their families, for just as the family supports the force, so must we support the family.

Teach, for it is through education that we build the foundation for our future.

Continuously improve in all aspects of our enterprise.

WE CARE for each other just as we care for our patients. This is the basis of the teamwork and trust that must exist for us to succeed.

Naval Hospital Camp Pendleton Guiding Principles

Quality Comes First: To achieve customer satisfaction, the quality of our healthcare and hospital services will be our number one priority.

Customers are the Focus of Everything We Do: We are committed to the goal of fully satisfying all of our customers - both internal and external. Our customers include the general public who expect us to ensure the health and physical readiness of our active duty customers.

Continuous Improvement is Essential to Providing the Highest Quality of Patient Care: We will encourage innovation and maintain a constancy of purpose to continuously improve all aspects of our healthcare delivery.

Innovation will be Encouraged and Rewarded: Continuous improvement is possible only when innovation is both sanctioned and encouraged.

Employee Teamwork is Our Way of Life: As team members we will treat each other with trust and respect. Every employee will seek to make their own job and their fellow worker's job easier and more efficient.

Staff Education is Essential to Our Success: We will provide the highest quality of professional education to every member of our staff. We recognize that employee professional growth will both increase readiness capability and lead to ever increasing efficiency in our work.

Patient Education and Community Health Education Efforts are Essential: These efforts promote wellness and ensure effective health care maintenance of patients. We will take every opportunity to provide such education to our consumers.

Ethical Standards will Never be Compromised:
Every employee will maintain high ethical standards

which will constantly meet or exceed the expectations of our consumers and ourselves.

Navy Medical Department Vision:

WE ARE the Medical Department of the United States Navy

WE ARE COMMITTED to providing an environment of healthcare excellence in which:

ALL ENTRUSTED TO OUR CARE proudly view Navy Medicine as their preferred source of healthcare.

HEALTHCARE PROFESSIONALS view Navy Medicine as a superior arena for realizing their professional growth and satisfaction.

HEALTHCARE ORGANIZATIONS view the Navy Medical Department as a paradigm of excellence.

FLEET AND FIELD COMMANDERS view Navy

Medicine as fully capable of providing optimal, timely, and comprehensive healthcare to their Sailors and Marines worldwide in peace and war.

OUR PEOPLE view themselves as empowered members of the world's finest healthcare team.

Naval Hospital Camp Pendleton Goals

1. Develop a managed care plan by 31 December 1991 for implementation in Fiscal Year 1993.
2. Upper management, including Commanding Officer, Executive Officer, and Directors will develop the POM and budget submission for the command.
3. All hospital personnel will be exposed to the basic principles of Total Quality Leadership.
4. Maintain C-1 readiness in excess of 90% at all times.

5. Increase our retention of good people.
6. Promote an effective equal opportunity climate and eliminate discriminatory practices.
7. Promote quality of life for our people.
8. Continuously elevate clinical standards of care.
9. Promote health and wellness through programs which include consumer education and community outreach.
10. Develop innovation program that involves top management review and action weekly.
11. Seek cost reductions in all activities undertaken.
12. Conduct ongoing education programs of the highest quality that foster professional growth among

all of our staff and other members of the military community.

13. Consistently provide command information to staff.

14. Attain and maintain state-of-the-art facility and equipment.

The very basis of quality is measured in management's commitment and leadership focused on the organization's future. Creating a vision of that future and a clear understanding of what the Naval Hospital is trying to achieve is integral to the quality improvement effort.

All too frequently, planning in healthcare organizations has been seen as responding to market instability, reductions in productivity, and increasing regulatory requirements by external agencies. The process of establishing organizational vision may have the ability of inspiring performance and may actually play a role in creating that future. The

organizational vision puts planning into a much larger environment. Once the vision has been constructed, organizational planning efforts must clearly parallel the vision. With a firmly established vision, the leadership of the Naval Hospital is able to direct organizational goals towards accomplishing the future state of the organization. In this way the vision can give direction and meaning to the work. The vision impels and vitalizes the work force, especially when the employees feel that the vision is practical and meaningful. The impression that they can personally add excellence to the organization and make a genuine difference is a powerful stimulator.

The organizational vision of Naval Hospital Camp Pendleton is embodied in the mission statement, guiding principles, and goals. Together these documents represent the achievable future.

For acceptance of and conformance to the organizational vision it is necessary for the hospital leadership to publish and distribute to all employees a statement of the aims and purposes of the organization. Additionally, the vision is posted near each entrance

to the hospital in an effort to demonstrate to our customers our commitment to quality. For the workers to strive to achieve this vision requires that management constantly demonstrate their commitment to this future.

Constancy of purpose requires an organizational transformation in which each member of the organization understands and works to achieve the vision. Successful transformation necessitates a change in organizational culture. The organization culture is best defined as a pattern of shared beliefs and expectations found among an organization's members and is formed around the actions and conduct of the organizations leaders. The paradigm shift towards an environment of continuous quality improvement requires the sincere commitment of the organization's leaders.

Point II. Adopt the new philosophy for economic stability by refusing to allow commonly accepted levels of delays, mistakes, defective material, and defective workmanship.

Healthcare in America has become complacent in its acceptance of delays, mistakes, and defective workmanship. The United States harbors over 50,000,000 people who are either uninsured or underinsured. Their access to quality medical care is frequently limited due to extremely high health care costs. A few of the reasons for the prohibitive health care costs are related to the facts that the health care consumer pays the price for malpractice in the form of higher rates to cover malpractice premiums. Additionally, consumers pay the price for errors, and they pay with dollars, time, and frequently with their very health. In America access to quality health care is limited by hospital management inefficiency and unplanned utilization of available resources.

To adopt the new philosophy of Total Quality Leadership requires an organization to become intolerant of past practices of inefficiency and waste. According to Crosby, in 1980, the cost of inefficiency can and does drive corporations to bankruptcy. He explains that the costs associated with doing things right is minimal compared with producing the same

product or service but having to rework or delay due to errors or inefficiency. It is both possible and imperative that things be done correctly the first time. However, quality is more than simply doing the right things, it also involves doing things right. Health care patients have developed expectations of this philosophy in practice. The healthcare patient of today fully expects that when they receive medical treatment it will be delivered in a timely manner, be appropriate the diagnosis, be effective in the manner intended, and that they will emerge from the system healthy. For example, when a patient is given an injection of a medication, the patient fully expects that it is the correct amount of the proper medication, given at the right time in the appropriate location, and that the medication is appropriate for the disease being treated. Since it is entirely achievable to do things correctly the first time, Dr. Deming argues that nothing less should be acceptable.

Many healthcare professionals have argued that our patients arrive with unrealistic expectations. Comments occasionally heard are ones such as "sometimes

patients get sicker despite medical care" or "sometimes mistakes happen, you've got to expect these things" or "medicine is not an exact science". These comments represent the obstacles which must be overcome in adopting the new philosophy. Through the careful analysis of the processes by which medicine is practiced can lead to the continuous improvement and the elimination of errors.

Total Quality Leadership at the Naval Hospital represents a customer-oriented response to an overwhelming public perception of the health care business, which ranges from dissatisfaction to fear. Concern about individual attitudes and corporate culture, are the very heart of TQL. The outcome of quality improvement should be increased communication and trust both in the workplace and an enhancement in the public image of the Naval Hospital.

Point III. Cease dependence on mass inspection to achieve quality by requiring statistical evidence of built-in quality in all facets of service. Understand the purpose of inspection, for improvement of processes

and reduction of cost.

Over the past decade the healthcare industry has come to rely on mass inspection as a means and a measure of healthcare quality. Generally speaking, the internal inspections fell under the control and auspices of the Quality Assurance Department. The list of external inspection sources include: Civilian External Peer Review of military physicians, the Joint Commission on Accreditation of Healthcare Organizations, Medicare, state licensing agencies, and others. The emphasis of these inspections in health care has been to find the "bad guy" instead of improving the processes by which healthcare workers labor. The desire of inspections, reviews, and audits is to identify those cases which fall below a minimum acceptable standard and then correcting this deficiency instead of building upon learned behavior to raise the standard.

To divorce ourselves from the practice of inspecting bad quality we have adopted the attitude of building good quality in. The goal is no longer to

inspect a reasonable sample size looking only for problems. The goal is to accumulate data about every patient event. Interpretation of these data then leads to conclusions which are used in positive ways to improve performance and to share data with the staff, the public, and the ever-present accrediting sources confirming effective performance when that is the case.

The management of the Naval Hospital must learn the meaning of statistical thinking. They must learn to group data into facts and arrange facts to acquire knowledge. They must learn how to discuss with data and administer with facts. Decision making must never be allowed to rest on guesswork. One of the most difficult tasks, and yet one of the most indispensable, is to develop the skills necessary to identify variation in statistical findings. That is, according to Deming, the ability to recognize common cause of variation and this which represent special or rare causes of variation. The ability to distinguish between these can be learned and from that ability managers learn how to reduce variation. In Total

Quality Leadership at the Naval Hospital we rely on the use of the seven basic tools of data analysis and display (cause-and-effect diagram, Pareto chart, histogram, scatter diagram, flow chart, run or trend chart, and control chart); and how to link the results of the use of these tools with appropriate management action.

Point IV. Reduce the number of suppliers for the same item by eliminating those that do not qualify with statistical evidence of quality; end the practice of awarding business on the basis of price alone. Make partners out of vendors.

Bureaucratic organizations, such as the Department of Defense have long argued that they could write specifications which would exactly define the quality of items, materials, or services acquired from a vendor. This has not proven true over the years. Specifications, by their very nature, define final products in terms of minimally acceptable standards. Dividends for quality products which exceeded specifications were rarely granted. Specifications do

not define the highest quality of a product, they merely describe the least acceptable level of quality which then, since they meet the stated specifications, must be purchased.

The traditional relationships between customers and suppliers have been based on the supposition that supplies that meet the customer's specifications will not have an unfavorable affect on the operation of the customer's technological processes or on the overall quality of the customer's product or service. It is true, however, that occasionally supplies which meet customer specifications may complicate the customer's production processes and impair product quality. When this is the case, a reduction in variation of supplies can help to improve product quality for the customer. Strategies for reducing variation in supplies for the Naval Hospital must necessarily include some legislative changes to the federal procurement systems and policies. A frequent roadblock to implementation of this process in Deming's model is the "low bid" concept. Within this policy framework the government invites competition for the production of goods or

services on behalf of the government, produces specifications for required product, and invites competitive bids among suppliers. The rules of the system, however, constrain the government in demanding awarding the contract to the lowest bidder with little regard to product quality or acceptability. In a military medical treatment facility, the ability to establish partnerships with existing suppliers is essential to survival.

Another factor in diminishing the practice of awarding business on price alone requires the consolidated effort of the Medical Staff. Variation in manufacturers and suppliers of common medical material must be identified, and if possible controlled. On the shelves at the Naval Hospital there are packages of catheters which represent seven different manufacturers. These products are essentially the same, however, physician's personal choice has mandated the variety. To effectively reduce variation such as this would require the Medical Staff to arrive at a consensus of one or two types and then retrain staff members in their proper use.

Once variation is controlled for, the establishment of working arrangements between the Naval Hospital and its suppliers becomes necessary. Mutually assured survival between customer and suppliers is a more powerful approach to management of the relationship than the competitive, adversarial relationship that now exists. The relationship between supplier and customer is one of co-dependence. The customer with no means of attaining specific supplies, materials, and services is no longer in business. Likewise, the supplier may have all the materials necessary to run a health care organization for ten years, but without the purchaser the material is wasted and the supplier is out of business. This dependence between customer and supplier should cultivate reliance and cooperation.

The Naval Hospital must examine the total cost of use of everything they purchase, not just the purchase price. The total cost of use must include information about risk associated with potential failure of product, cost of delays in shipment, cost in expiration, and cost of excess inventory. For example,

does the purchase of a low-priced, inferior-quality surgical instrument justify its use. No, the potential cost of failure is high in this case, and occasionally results in malpractice claims.

The Naval Hospital has chartered a Process Action Team (see "Structuring for TQL" section) for the expressed purpose of examining supplier and vendor relationships and the means of establishing long-term relationships of mutual benefit. The Medical Staff of the hospital is examining the issue of reducing variation in the types and manufacturers of commonly used medical materials with an aim toward high quality at an affordable rate.

Point V. Constantly improve every process for planning, productivity, and service.

To fully understand and implement Point V into the plan of Total Quality Leadership at the Naval Hospital it is necessary to determine precisely what precisely a process is. A process may be defined as a repeated set of actions which transforms input received from

suppliers into outcomes received by customers. The inputs may include people, services, medical materials, surgical equipment, environment, and information. The suppliers of the inputs may originate internally within the organization such as in the case of pharmacy in which the input received is a prescription written by a physician within the hospital. The outcome is an accurately prepared medication ready for use by the customer. For any process there may be several subprocesses involved, each of which could accurately be identified as an separate process. In the previous example, the receipt of the prescription may lead to an initial process of reviewing the prescription for accuracy and transmit it to the next process for label preparation. Each movement between processes establishes a supplier/customer relationship.

Precluding defects in products passed on to the customer requires attention to the process that produces the product. This concept represents a change in thinking from the quality assurance model in healthcare which seeks to assign personal responsibility and accountability for defects. By

examining the process itself we may achieve a higher quality product at a lower cost. Process improvement is the perpetual exercise of discerning the elements in a process to change that could ultimately improve the outcome for the customer and reduce variation in product outcome. By understanding the causative agents that affect process performance we are able to mobilize our efforts of improving the process and producing a higher quality product.

The approach embraced by the Naval Hospital and the Navy Medical Department is a basic approach to continuous quality improvement introduced by Walter Shewhart in 1939 and popularized by Dr. Deming more recently. The approach is known as the Shewhart Cycle or as the "Plan-Do-Check-Act" (PDCA) cycle for continuous process improvement. The description of the PDCA cycle below represents the version produced by the Hospital Corporation of America (HCA) and adopted and refined by the United States Navy Personnel and Research Development Center in San Diego, California.

Insert Figure 2 about here

The PDCA cycle works on a continuum and is most often depicted as a circular diagram in which each of the four elements occupies a quadrant. Each element of the cycle leads to the next element in a continuous cycle. The rotation through the cycle begins in the upper right quadrant and continues clockwise through each of the quadrants. It is significant in the fact that the cycle is circular and signifies that there is no definitive ending point and the cycle continues.

Plan Phase

The Plan phase of the continuous process improvement cycle relates to identifying those factors of relative importance to our primary customers. To identify these factors the Quality Management Board (QMB) must analyze what customer(s) the process is intended to benefit, which elements of the process are most important to them, which components of the process

have the greatest influence on the final outcome, and whether there exists an opportunity for improvement. Through careful analysis of these conditions the QMB is able to develop a quality improvement plan for a particular process or group of processes. The quality improvement plan developed by this means must be stated accurately and becomes the goal of the quality improvement effort. The goal established must be written in such a manner that the outcome achieved would be a measurable indication of whether improvements had been made. Fundamental to the TQL philosophy is the reliance on the scientific method through which the improvement could be verified by data and facts, and not reliance on the subjective opinion of any one person.

Do Phase

The Do phase follows the planning phase from which the quality improvement goals have been defined and stated. The variables relative to the process are defined at this stage. The identification of these

variables is the task of the Process Action Teams (PATs). PATs consist of team members from various disciplines who are familiar with the process selected for improvement. The knowledge and experience of the particular process enable PATs to identify variables that affect output quality. During the Do phase of continuous quality improvement, these teams are assigned three primary responsibilities. The first of these responsibilities is a careful analysis of the process and its outputs as it currently exists in an effort to identify those variables most closely related to quality of the product. Second, the teams develop measures of the variables. Third, the teams establish a data collection methodology and a format for data representation. Sound statistical practices are employed by the PATs to establish baseline data on process performance. The critical elements of the process are then graphically displayed in the form of a storyboard or flow chart. Finally, the identification of specific process variables is accomplished through a cause-and-affect analysis, using the Cause-and-Effect diagram described by Ishikawa, an example of which is

represented in Figure 1.

Check Phase

The role of the Process Action Teams during the Check phase is essentially to accumulate both process and outcome data. The data is then summarized using graphical display techniques. The TQL process relies primarily on seven graphic tools. These seven primary graphic tools used are depicted in Figure 3. Once the data has been summarized, the PATs and QMBs interpret the findings of the data collection to substantiate those variables have a significant effect on outcomes. As significant variables are identified, statistical analyses are conducted to understand the effect each variable has on output quality and final outcome.

Insert Figure 3 about here

Once the process variables have been determined it is necessary to establish what types of "causes" the variables represent. "Causes", according to Dr. Deming, have either a common or special influence on a process. Common causes are those statistically predictable events which occurred from the process itself. Special causes refer to external variables that are not part of the system. Special cause variables are generally isolated events or occurrences which affect outcome in a statistically unpredictable manner. Occasionally the specific origin of a special causes remains obscure. However, failure to adequately recognize the exact substance of the problem could result in ineffectual quality improvement efforts. This is usually the result of incorrectly assuming that a common cause is a special cause. Common and special causes can often be differentiated by the use of control charts which establish upper and lower control limits that over time show common or normal distribution about the mean.

Act Phase

Immediately after the Check phase, the PATs select process variables asserted to be the principal agents affecting process quality. These significant variables are used during the Act phase as focal points for process quality improvement efforts. The QMB s must identify which of these variables may be handled at the departmental level and which require command action. Special cause variations are most commonly handled at the lower organizational levels. Tackling common cause variables usually requires major policy or system changes that demand command level attention. On occasion it is necessary during the Check phase to take immediate action on special cause variations, particularly when they represent an element of danger to patient or staff.

As soon as the common causes variables are identified, the QMBs and ESC begin to identify the resources and responsibility levels necessary to enact the changes. Changes to the process, for the control or modification of common cause variation, should be attempted on a trial basis. The ESC and QMB should use caution in the commitment of resources for changes

before the efficacy of the change has been determined. If, during the trial phase, the change has had a positive impact on process improvement, the planned organizational change may move ahead with the commitment of resources and management support. Once the changes have been implemented it is necessary to periodically monitor the data to ensure the original improvement goals have been achieved. Finally, monitoring the process is a continual effort. The purpose of monitoring a process in which improvement has been achieved is not only to seek further opportunities to improve the process but also to determine if deterioration has taken place.

Although the PDCA cycle focuses on single process quality improvement efforts, it should be remembered that under TQL process improvement efforts are a continuous activity. The ESC should endeavor to conduct an endless search for innovative areas for improvement.

In expanding the original PDCA cycle, the Hospital Corporation of America (HCA) was able to detail additional elements which serve the planning function.

The process was designed to assist the ESC and QMBs in determining which processes would be targeted for continuous quality improvement and to assign membership of an effective Process Action Team. Specifically, the acronym "FOCUS" was added and the continuous quality improvement model becomes now the "FOCUS PDCA":

Finding a process in need of improvement

Organizing a team that understand the process

Clarify the current knowledge of the process

Understand the causes of process variation

Selects a process improvement strategy

Plan for carrying out the selected improvement

Do the improvement decided upon

Check that result of action improved the process

Act on the gain in quality improvement

The Navy Medical Department has been authorized to adopt the FOCUS PDCA cycle for internal use (NMQI, 1990). This model is used as the basic technique for continuous quality improvement at the Naval Hospital.

The environment of medicine is a union of concentric systems or processes having the patient as the central focus - making appointments, receiving radiologic studies, obtaining a prescription, having surgery, etc. Continuous improvement requires a commitment from senior management to seriously weigh recommendation for improvement from employees. The Naval Hospital has enacted an employee suggestion program which invites forthright recommendations and suggestions from all hospital employees on any issue, opportunity to improve, or process improvement recommendation. To date over sixty innovative and insightful recommendations have been received and acted upon.

Point VI. Institute modern methods training and retraining on the job to make better use of all employees.

Points VI and XIII are related, as both incorporate the vision of a well-trained and educated staff. The primary difference lies in their scope.

The focus of Point VI is on training employees in the skills related to a specific job or task, with the objective of helping the employee do their job better. This training goes well beyond the learn as you go concept. The Naval Hospital frequently receives physicians, nurses, and hospital corpsmen directly from educational institutions. Now while it is true that these people possess precisely the technical educational level necessary to function in their new job, it is also true that they have not been adequately trained to understand and work within the processes which function here. The initial indoctrination of these employees helps them more adequately adjust to the new system and includes a discussion of how their particular work fits in to the larger processes of the organization.

Job training, skill training, and cross training are integral parts of the quality process, and as ongoing as the process itself. The Naval Hospital's training program provides people with the tools they need to do the job right the first time. Our traditional approach to training, which was confined to

on-the-job instruction and infrequent professional and management forums, could not answer the demands of the quality process. Training for physicians, nurses, hospital corpsmen, and administrators has always been an integral part of their lives. The constantly evolving world of medicine requires a personal commitment to remain up-to-date. The same philosophy applies to the practices of Total Quality Leadership. Introductory training in the philosophy of TQL and orientation to the Naval Hospital mission, values, and goals constructs the framework upon which additional training built.

The Naval Hospital had no long-range training program outlined when we began the transition to Total Quality Leadership. For the most part the program began to evolve as the transformation challenged us to master new skills and as our people became better able to identify their own training needs.

Training at the Naval Hospital is expanding beyond the bounds of the traditional inservice courses such as Basic Cardiac Life Support and Advanced Cardiac Life Support. Training is beginning to encompass new fields

for employees. Training programs in data collection and analysis, performance measurement, and information management are being included in the employee training. Organizational quality cannot improve unless all staff members involved in the healthcare processes learn to collect and manage information to assist their efforts in quality improvement.

Training efforts in all aspects of Total Quality Leadership have begun throughout the Naval Hospital. Our attention has been directed at providing training in TQL philosophy and processes from the organization's top down. By sponsoring several upper management TQL awareness seminars and implementers conferences we have managed to indoctrinate the entire upper management. Several key members of the command have attend training sessions which have prepared them to teach awareness seminars in TQL to the remainder of the staff. The training of the Naval Hospital staff follows a planned and systematic approach designed to train every employee in philosophic and technical skills associated with TQL starting from the top down.

Congressional cost containment measures,

organizational downsizing, and personnel shortages in some professions have created an environment in which Naval Hospital employees are constantly pressured to do more work with less human and material resources. Without adequate, comprehensive, and specialized training in quality the hospital is destined to succumb to its environment. Training enables the employees to positively influence the quality improvement of processes.

Point VII Institute leadership. Focus supervision on helping people do a better job; ensure that immediate action is taken on reports of conditions detrimental to quality.

Dr. Deming states that traditional activities such as managing or supervising must be replaced throughout the organization with leadership. A considerable volume of literature has been written on the subject of leadership in recent years, but most have dealt with the personal characteristics of effective leaders which enable them to guide the actions of others. Adjectives

were often ascribed to leaders which illustrated observable behavior. Adjectives such as trustworthy, visionary, courageous, compassionate, persuasive, warm, and charismatic are frequently used.

The TQL conversion requires a shift from reactive to proactive management. The image of the manager must change from the idea of supervisor (one who controls and directs the actions of others) to an image of a leader (one who assists others in attaining a common goal).

Most managers in health care institutions share qualities similar to the managers in a variety of other industries. They tend to perceive their job as one of motivating inadequate employees to perform at higher levels.

The philosophy of Total Quality Leadership involves new and exciting roles for the leaders of America's health care organizations. The new leader demonstrates TQL leadership in daily efforts. The effective leader in at Naval Hospital Camp Pendleton must: develop personal commitment to the philosophy of Total Quality Leadership; enrich and heighten personal

awareness of quality and professional literature; establish an environment of respect and trust of all employees in which continuous quality improvement is expected; develop and support a system of teamwork which focuses on the our customer's needs, expectations, and desires; and fully support the staff through resources, training, and personal commitment to quality.

Leadership begins at the top of the Naval Hospital but it is clear that it is not limited to top management. In most instances, there will be at least three levels to which the principles apply: **Top management** (Commanding Officer, Executive Officer, and seven Directors) defines, drives, and distributes the constancy of purpose message throughout the organization. The crusade towards continuous quality improvement is of foremost importance to this purpose. As Deming (1986) has observed, it is top management's responsibility to create the system and to provide both the resources and a plan to carry out its mission. Top management must lead the organization in fulfilling that mission. **Departmental and mid-level managers**

(clinical and administrative department heads, nursing supervisors) must lead by personal example and have a complete understanding of the processes under their control and how they fit into overall mission of the Naval Hospital. Mid-level managers aim to improve the processes of the organization and assist in eliminating barriers to communication. **First-level supervisors** (officers, charge nurses, Chief Petty Officers, and departmental leading petty officers) must learn to adopt the principles of leadership discussed by Dr. Deming. Their new role is primarily one of helping (coaching) their employees to do a better job by providing good tools, materials, equipment, training, instructions, and other resources necessary to produce a quality product.

Point VIII. Encourage effective two-way communication and other means to drive out fear throughout the organization and help people work more productively. Create a climate for innovation.

Quality improvement can only occur when there is a

willingness among people in the organization to take risks, propose suggestions, and communicate openly with suppliers and customers. These improvements may only be achieved when the fear of reprisal, criticism, ridicule, or even loss of job security is eliminated. Management must create an environment in which mistakes may be acknowledged as an opportunity for learning and further growth. Fear can destroy the motivation for quality improvement in any health care organization. If workers are afraid to suggest or to make improvements, the ultimate loser is the organization.

According to the published criteria for the Malcolm Baldrige National Quality Award for 1990, which the Naval Hospital has adopted as goal to excellence, a quality organization may be judged on its ability empower employees with the ability to make recommendations and to recognize the contributions of these employees as both individuals and members of teams. The criteria used for the award are listed below and serve as the goal for employee empowerment at the Naval Hospital:

"Develop a strategy for encouraging contributions to quality including recognition of individuals and groups to ensure effective support for organizational quality improvement efforts.

Describe how recognition and performance measures reinforce quality relative to other business considerations such as quantity; how employees are involved in the development of measures.

Provide summary analyses and trends in recognition of individuals and groups, by employee category, for contributions to quality improvement.

Demonstrate how the company evaluates the effectiveness of its recognition and performance measurement systems, including soliciting feedback from employees, to improve strategies and methods."

For successful employee empowerment and subsequent recognition the use of information and approaches to individuals must be positive and supportive rather than punitive, embarrassing, and threatening. Employees must develop a sense of trust in and honest interest of the Naval Hospital top management. This change to a more positive approach may require additional training for managers who prefer to direct rather than lead their employees on the mutually successful course of continuous quality improvement.

The role of innovation cannot be overstated. The accumulated knowledge available in medical, administrative, and technical areas with the Naval Hospital cannot be ignored. Our employees represent the greatest research and development partnership ever devised. With a fostering attitude by all three levels of management within the organization will we be able to realize the full potential for quality improvements in the processes of this hospital.

Point IX. Break down barriers between departments.

Teamwork across internal organizational lines is

essential. Optimize toward the aims and purposes of the hospital the efforts of teams, groups, departments, and individuals.

Military medical treatment facilities, such as the Naval Hospital at Camp Pendleton are replete with barriers between departments. Departments in hospitals have traditionally existed and functioned as defined by their position on an organizational chart, and following paths of communication marked in dark lines. In such a system competition, rather than teamwork, is emphasized between departments, and workers are not encouraged to share resources that could benefit the patient.

Everyone within the organization must be willing to listen and learn how to improve their own processes and in what manner they would be able to assist others to improve theirs. A considerable amount of outcome errors, rework, and variation could be eliminated if communication barriers between staff members and organizational areas could be reduced. As workers in different departments come to understand and adopt the

mission and goals of the Naval Hospital as their own and begin to think of each element within the organization as aimed at the same goals, barriers will begin to dissolve. The mission and goals of one hospital department must never be viewed as more critical than goals and mission of the entire hospital. With this understanding will come the knowledge that every process within the hospital has a supplier of input and a customer to receive the output. The departmental barriers will disappear when each hospital employee strives to meet the needs and expectations of his internal customers so that the ultimate customer, the patient, will benefit. Each department must recognize its role as both customer and supplier within the organization, relying on other departments to perform well for the benefit of the patient.

One critical element within this point is additional training for all members of the command on group behavior, organizational behavior, dynamics of small groups, and role of Total Quality Leadership in attaining quality from individuals, groups, and teams. The Executive Steering Committee, Quality Management

Boards, and Process Action Teams already established at the Naval Hospital are showing promise in deflecting or eliminating the barriers between departments and individuals. Each of these teams is comprised of members from widely varied backgrounds, training, and professions all blended towards a common purpose, achieving higher quality in one or more of the processes which ultimately affect the quality of health care our patients receive.

In recognizing and accepting the mission, goals, and values of the Naval Hospital as integral to the success of the organization and ultimately the satisfaction of our customers it is imperative that we put aside territorial interests for the common good. Open communication, cross-functional teams, and respect for others will eliminate the barriers which exist today and allow for the true advancement of quality throughout the organization.

Point X. Eliminate slogans, exhortations, and targets for the work force.

This simple point is so benign in appearance and yet so malignant if ignored. The use of organizational slogans and exhortations were originally intended to motivate employees to higher levels of production or quality. It is as though simply reminding a person to do a better job would accomplish the result. The result on morale among the workers who view posters urging improvement is devastating. Many employees consider statements such as that to be insult because it assumes the worker is not performing adequately now and has no desire to do these things without some reminder.

The Naval Hospital has taken steps to permanently eliminate these detrimental slogans which remind employees to do a better job. Slogans and exhortations are useless in promoting higher levels of quality unless they are accompanied by training and genuine management support.

Point XI. Eliminate numerical work quotas and standards for the work force. Eliminate management by objective. Eliminate numerical goals for management.

Institute methods for improvement.

When Dr. Deming speaks of eliminating management by objective, eliminating numerical goals for managers and the work force, it is a common notion that he advocates elimination of numbers used in business management. Instead, Dr. Deming believes that these management methods focus too highly on the process by which the number was attained rather than on the number itself. As discussed previously, employees soon learn to play the game to produce the elements management seeks in quotas, standards, or objectives. The transparent results may appear to represent increased productivity or quality enhancements but in reality prove nothing. For successful implementation of a Total Quality Leadership program it is essential that numbers be used productively. Numbers represent the means by which measurement occurs, and measurement is essential to understanding the current level of quality and how it might be improved. Employees and managers have learned over decades to fear numbers because they have been used to both reward and punish workers. When

everyone within the organization is committed to continuous quality improvement and fear has been driven out of the system, numbers become compelling.

The hospital that fails to quantify its quality goals through the development a comprehensive definition is also likely to fail to establish useful standards for the measurement of results. Poorly defined standards may fail to address the real goals of a quality improvement initiative.

"Benchmarking" offers an excellent assessment of organizational performance. "Benchmarking" involves a comparison of ourselves against others. By comparing ourselves with the best Naval hospitals, ourselves with the best Department of Defense hospitals, and by comparing ourselves with the most admired healthcare organizations in the civilian market could provide us information beyond a comparative analysis of this year versus last year.

Performance measurement is a critical requirement for determining quality within health care organizations. For example, radiologic examinations and measurements determine various anatomical

characteristics such as the presence of disease, fracture, and growth variance. These measurements are indicators of whether the body is healthy, and consequently are the basis for medical decisions. The quality of the radiographic picture, the precise alignment of body position, and correct technique must be highly accurate, or a diagnosis may be wrong. The measure of overall quality within the entire Naval Hospital is determined by whether interpretation of these measurements, diagnosis and treatment are correct, effective, and helpful to the patient.

The patient's analysis of care is always a subjective view and very difficult to objectively measure. A broad range of patient satisfaction information must be captured and analyzed on every patient seen. The information obtained from should enable a more thorough understanding of the patient's perception of the health care processes and serve as a basis for continuous quality improvement.

Point XII. Remove barriers that disable the employees pride of workmanship.

The knowledge that the work an employee performs is valued by the hospital is its own reward. One of the most formidable barriers within the Department of the Navy is the annual performance evaluations. The employee is frequently assessed on what they, as an individual have accomplished, whereas in a highly complex organization such as a hospital the team concept is a critical element frequently overlooked when an employee is appraised.

The current system of performance evaluation used throughout the Navy is contrary to the teachings of Dr. Demings. Dr. Demings advises elimination of those elements of performance appraisal which focus on judgment of results. He further warns that ranking or rating employees does not contribute to the improvement of performance in the future. In the Navy performance evaluation process employees are ranked and rated with their peers and this ranking serves as decisive factors in promotion opportunities. Until such time as the Navy's performance evaluation process is modified to reflect current thought in the TQL philosophy, Commanding Officers are seeking ways to express

positively on team efforts, group achievements, risk taking, creative and innovative thinking, and other elements of TQL while ensuring the person evaluated remains competitive in the promotion cycles.

Point XIII. Institute a dynamic program of education and self-improvement for every employee, manager, and professional staff member.

One of the first endeavors faced in the implementation of Total Quality Leadership is the early identification and training of key hospital staff in TQL philosophy. The training phase follows a comprehensive plan in itself to ensure an incremental distribution of the TQL philosophy throughout the organization. Training in the TQL methods requires a commitment to customer orientation for all staff of the hospital and the training should be planned according to the specific group being trained.

Following awareness training at all levels a program for training facilitators must be pursued to assist the various Process Action Teams which will

begin the process of continuous quality improvement. Finally, training in statistical process control would be conducted on a just-in-time basis. That is, once a process has been identified which is in need of improvement and a course of action has been established which will produce data for analysis is the time to begin training in statistical process control techniques.

Dr. Deming (1986) has been said that "the least expensive form of research and development is found in an educated and motivated workforce". Quality begins and grows with education. A ceaseless program of training keeps workers motivated and insures that the process of continuous quality improvement continues throughout the life of the organization.

The training associated with educating the entire staff in the practices and philosophy of Total Quality Leadership requires a three phased approach. The training program requires a commitment in spirit, support, and resources from the hospital's top management. The Naval Hospital has decided to develop an in house training capability and has begun the

course of curriculum development, identification of trainers, training trainers, and specifying the training sequence - subjects and participants.

TQL training must be integrated consistent with the planned implementation of TQL. The first priority for training at the Naval Hospital has been conducted with a top down approach, that is senior management is fully educated in TQL theory and trained in TQL skills. Middle management follows next in the training cycle, and the remainder of the command receives training just-in-time. One basic element of the TQL training program for the Naval Hospital is that it is planned as a continuous process. The continual training and retraining is necessary due to the nature of military health care facilities. Military and civilian employees turn over at rate far in excess of civilian health care employees. Military personnel transfer at the rate of once every three years and it is apparent that during any one year, one third of the hospital staff be departing and new staff members will be arriving. Orientation and training of new staff members is a perpetual concern at the Naval Hospital.

The three phased approach to training used at the Naval Hospital follows the general outline described below:

Phase I training: The primary focus of Phase I training is centered around TQL theory and basic concepts. The trainees learn to view the organization as a system, learn about continuous quality improvement; process analysis, control, and improvement; special causes and common causes of process variation; and about the benefits of cross-functional management teams.

Phase II training: Basic methods and tools of TQL. Staff members receive an introduction to scientific method. It is critical at this phase to demonstrate to physicians that Total Quality Leadership is consistent with their ethic and training. The scientific method used in TQL is nearly identical to the process they learned in medical school. Physicians do not diagnose or treat in a haphazard fashion, they require enormous volumes of data and patient specific information before making diagnostic assessments or planning treatment regimens. The same concept must

apply to management of health care organizations. Physicians quickly realize they are not learning a "new" way of business but are actually expanding the scientific method philosophy used already. Trainees in this phase are taught fundamentals of statistical thinking, methods of enumerative and analytic studies, the use of basic graphic tools, and are taught an understanding of the FOCUS PDCA process improvement model.

Phase III training: Phase III training represents the advanced course in TQL. Employees trained during Phase III are instructed in advanced scientific methodology, quality function deployment, off-line experimental methods, and advanced statistical methods.

Point XIV. Put everyone in the organization to work to achieve the transformation.

Dr. Demings' point reflects the most critical element of any of the Fourteen Points through the universal commitment throughout the organization that is necessary in order to achieve the quality

transformation. Total Quality Leadership is not owned and achieved through the unique efforts of management. Total Quality Leadership is only achieved through the efforts of the entire staff and is owned by all.

The Commanding Officer of the Naval Hospital Camp Pendleton, Dr. David Frost, Captain, Medical Corps, United States Navy is openly and publicly committed to the philosophy and practice of Total Quality Leadership. Under his leadership and guidance the transformation of the Naval Hospital to a customer-oriented organization dedicated to the practice of continuous quality improvement will come to fruition. He calls for continuous and relentless improvement in the total process that provides health care to our customers, not simply in the improved actions of individual professionals. Improvement is thus measured on both outcome and process.

Captain Frost understands that productivity and quality cannot be raised appreciably without involving everyone in the organization in as many ways as possible. He has empowered Directors and Department Heads throughout the organization to be actively

involved in the design of implementation strategies. Every employee within the Naval Hospital is empowered to be actively involved in creative problem solving, creating innovative work techniques, and seeking and identifying opportunities for improvement in the processes of the hospital.

With superb leadership and empowered employees, everyone at Naval Hospital is dedicated to the principles of Total Quality Leadership and is at work in the pursuit of organizational excellence and the production of quality services for our customers.

Deming's Seven Deadly Sins

No discussion of an implementation plan for the transformation of an organization into the philosophy of Total Quality Leadership would be complete without a brief examination of what Dr. Deming calls the "Seven Deadly Sins". In association with Dr. Deming's Fourteen Points the Seven Deadly Sins require management attention to aid in preventing these "sins" from occurring. The Seven Deadly Sins are presented

below with a brief explanation of their applicability at the Naval Hospital Camp Pendleton:

lack of constancy of purpose: An organization that is without constancy of purpose has no long range plans for staying in business. Management would become insecure as would all employees. The Naval Hospital is clearly on the path of avoiding this "deadly sin". Excellence in leadership and clearly communicated organizational goals and mission are the factors of prevention.

Emphasis on short term profits: A management focus on merely increasing the quarterly percentage enfeebls quality and productivity. The Naval Hospital does not rely on profit percentages as a means of growth and existence. Instead the Naval Hospital receives a fixed budget from which to operate. Efficient use of these finances is the key to organizational success and can only be accomplished through reduction of rework, elimination of errors, and continually improving the processes associated with providing care.

Evaluation by performance, merit rating, or annual

review of performance: The effects of these are devastating - teamwork is destroyed, rivalry is nurtured. Performance ratings build fear, and leave people bitter, despondent, and beaten. The Naval Hospital, and the United States Navy in general, have committed this "deadly sin" but are examining means of evaluating individuals less on individual performance than on quality improvement efforts as a member of a team or teams.

Mobility of management: Job-hopping managers never understand the companies that they work for and are never there long enough to follow through on long-term changes that are necessary for quality and productivity. This has long been a criticism of Navy Medicine, and unfortunately with some merit. The nomadic nature of military personnel frequently results in attitudes that are reflected in comments such as "I'm only here for a couple years, why should I help change the organization, I'll be long gone before I see the results." There is little remedy to the transient nature of military personnel but a commitment by each of us to leave each organization better than we found

it for the next person will go a long way to avoid this sin.

Running a company on visible figures alone: The most important figures are unknown and unknowable - the multiplier effect of a happy customer, for example. The Naval Hospital is seeking new and improved methods for capturing "soft" data such as how happy a customer is or to what extent the staff is satisfied working here.

Excessive medical costs: Medical costs for employees has a crippling effect on the economy of any organization. The Naval Hospital is no exception, although at a somewhat diminished level than civilian counterparts.

Excessive costs of warranty, fueled by lawyers that work on contingency fee: Guarantees in any organization are difficult to attain and particularly so with the nebulous nature of health care or wellness. While not personally liable, the Naval Hospital must maintain a rigorous quality assurance/risk management department to reduce the government's risk associated with malpractice cases.

Structuring for Total Quality Leadership

The organizational structure of the Naval Hospital does not appreciably change with the transformation to Total Quality Leadership. The changes in the organization are most evident in the new levels of interrelationship. The structure for Total Quality Leadership chosen for the Naval Hospital is similar in design and function to those developed by the Navy Personnel Research and Development Center in San Diego and the Naval Medical Quality Institute in Washington, DC. Figure 4 reflects the current formal organizational structure of the Naval Hospital Camp Pendleton. It represents the characteristic patterns associated with traditional Naval hospitals.

Insert Figure 4 about here

The practical relationships required with Total Quality Leadership require cross-functional management to achieve continuous quality improvement. The process requires cooperation and coordination both horizontally and vertically in the organization. Figure 5 displays the structure for Total Quality Leadership alongside the traditional organizational chart. This arrangement demonstrates the vertical integrations necessary for effective quality improvement efforts. The Executive Steering Committee (ESC) uses outcome information to define major organizational goals. The ESC and Quality Management Boards (QMBs) then work together to relate the outcome requirements to specific process outputs. They then define how the outputs need to change. The QMBs and Process Action Teams (PAT) work together to identify the process variables that have the greatest effect on output quality. As these variables are changed, output and outcome information is collected. This information is analyzed to check progress toward the quality improvement goals.

Insert Figure 5 about here

The Executive Steering Committee represents the highest level of management at the Naval Hospital and is made up of the Commanding Officer, Executive Officer, and all Directors. The ESC functions as the primary strategic planning force with the command and serves as the driving force for TQL in the organization.

The Quality Management Boards are permanent cross-functional teams whose membership includes Directors and Department Heads. This membership arrangement is designed to facilitate improved communication and coordination across vertical and horizontal levels of the hospital. The QMBs use the various backgrounds and knowledge of its membership to select processes within the organization which may have a significant impact on the hospital mission. The QMBs are formally chartered by the ESC and function in perpetuity despite changes in membership. The QMBs organize Process Action Teams and remain responsible

for the receipt of data and information from their various PATs.

The Process Action Teams are temporary teams established for the expressed purpose of examining a specific process or related processes and identifying potential areas for improvement. Membership on a PAT team may be held by any member of the command who is familiar with the process being analyzed. The primary criteria for selection is that the individuals selected be highly knowledgeable about the processes within the unit.

Conclusion

The Naval Hospital in Camp Pendleton, California has begun the journey to continuous quality improvement and the transformation to Total Quality Leadership. However, initial experience indicates clearly that increased quality and productivity, decreased costs, improved employee empowerment, and increased attention to customer needs and expectations which other organizations on the journey have experienced are realistically attainable to the Naval Hospital utilizing the comprehensive philosophy of W. Edwards Deming. Steadfast dedication and the inspiration of a leadership committed to the transformation will enable the Naval Hospital to provide high quality health care to our customers and continually improve that level of care. We understand that we will never lean back in our chairs and sigh "We've done it! We're as good as we can be.". The results of the efforts of today's vanguard will not be realized for years.

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APPENDIX

DEFINITIONS

CAUSE AND EFFECT DIAGRAM - A graphic tool used to explore and display all the factors that may produce a given effect. It represents knowledge of the mechanisms of a process by organizing all potential causes that contribute to the desired or undesired effect. One of the basic tools of the quality improvement process. Also known as a Fishbone Diagram, or an Ishikawa Diagram.

COMMON CAUSES - Causes of variation that are inherent in the process hour after hour, day after day, and affect every occurrence of the process.

CONTROL CHART - A display of data in the order that they occur with statistically determined upper and lower limits of expected common cause variations. It is used to indicate special causes of process variations, to monitor a process for maintenance, and to determine if process changes have had a desired

effect. One of the basic tools of the quality improvement process.

FLOW CHART - A graphical representation of the flow of a process. A useful way to examine how various steps in a process relate to each other, to define the boundaries of the process, to identify customer/supplier relationships in a process, to verify or form the appropriate team, to create common understanding of the process flow, to determine the current method of performing the process, and to identify redundancy, unnecessary complexity and inefficiency in a process. One of the basic tools of the quality improvement process.

FOCUS-PDCA - An acronym meaning: Find a process to improve, Organize a team that knows the process, Clarify current knowledge of process, Uncover root causes of process variation, Select the process improvement, Plan the improvement and continued data collection, Do the improvement data collection, and analysis, Check the results and lessons learned from

the team effort, ACT to hold the gain, to identify the owner of the improved process, and to continue to improve the process. FOCUS-PDCA provides a roadmap for continuous process improvement when linked to the hospital's mission.

HISTOGRAM - A graphic tool used to depict variation in process performance or results. It may be used to show how the majority of process outputs compare with a goal value as well as with its specification limits. A basic tool of the quality improvement process.

ISHIKAWA DIAGRAM - See "Cause and Effect Diagram".

OUTCOME - The degree to which outputs meet the needs and expectations of customers. Customers judge the outputs of a process, and that linkage of customer values and process outputs is called an outcome.

PARADIGM SHIFT - A point in time when the knowledge or structure which underlies a science or discipline changes in such a fundamental way that the beliefs and

behavior of the people involved in the science or discipline are changed. Many people feel a major paradigm shift is underway today in the healthcare field as the traditions of samaritanism and science began to include social accountability.

PARETO CHART - A bar graph used to arrange information in such a way that priorities for process improvement can be established. It displays the relative importance of data and is used to direct efforts to the biggest improvement opportunity by highlighting the vital few in contrast to the many others. One of the basic tools of quality improvement process.

PROCESS - The transformation of inputs provided by suppliers to outputs received by customers through a series of repeated action. Customers judge the outputs of a process, and that linkage of customer values and process outputs is called an outcome. A hospital is a network of processes.

PROCESS IMPROVEMENT - The continuous endeavor to learn

about all aspects of a process and to use this knowledge to change the process to reduce variation and complexity and to improve customer judgement of quality. Process improvement begins by understanding how customers judge quality, how processes work, and how understanding the variation in those processes can lead to wise management action.

PROCESS VARIATION - The spread of process outputs over time. There is variation in every process, and all variation is caused. The causes are of two types - special or common. A process can have both types of variation at the same time or only common cause variation. The management action necessary to improve the process is very different in each situation.

REWORK - The act of doing something again because it was not done correctly the first time. It can occur for a variety of reasons, including insufficient planning, failure of a customer to specify the needed input and failure of a supplier to provide a consistently high quality output.

RUN CHART - A display of process outputs in the order they occur. It is used to identify meaningful trends or shifts in the level of a process. One of the basic tools of the quality improvement process. Sometimes called a time plot or trend chart.

SCATTER DIAGRAMS - A graphical display often used to measure the strength of the possible "cause and effect" relationships identified in the "Do" phase of the FOCUS-PDCA cycle. These diagrams can be used to show if changes in a process variable result in changes in the output.

SHEWHART CYCLE - See "FOCUS-PDCA".

SPECIAL CAUSES - Causes that are not in the process all the time or do not affect every occurrence but arise because of special circumstances.

SUPPLIER - The party or entity responsible for an input to a process. A supplier could be a person, a department, a company, etc.

TRANSFORMATION - A major organizational change from the present state to a new, preferred state in which the quality improvement process flourishes.

FIGURE 1

IMPLEMENTING TQL AT NHCP

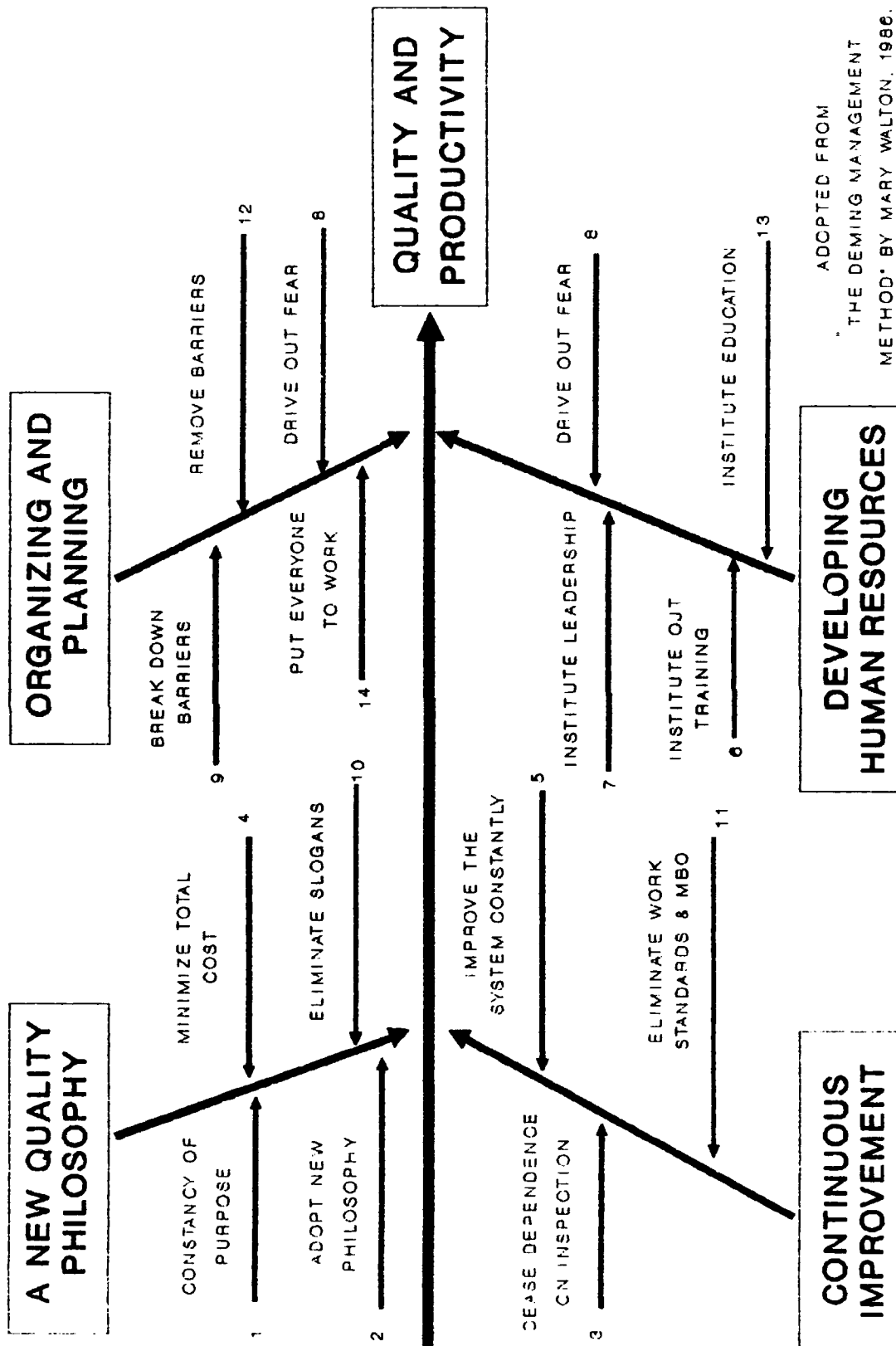
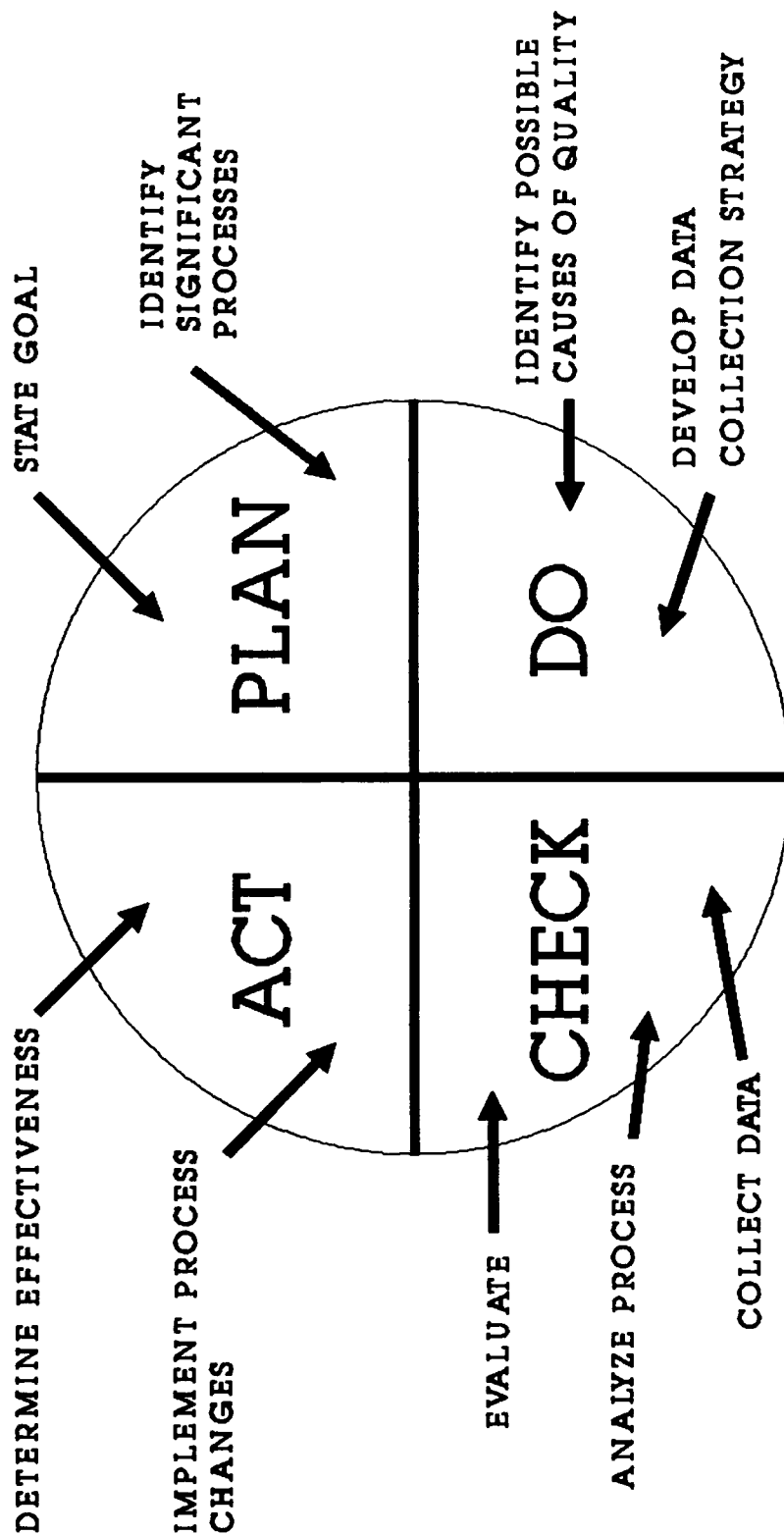


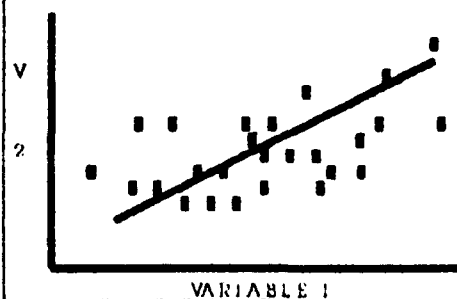
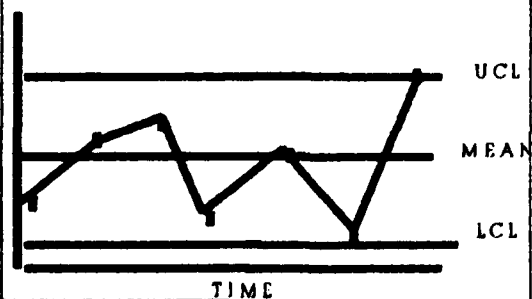
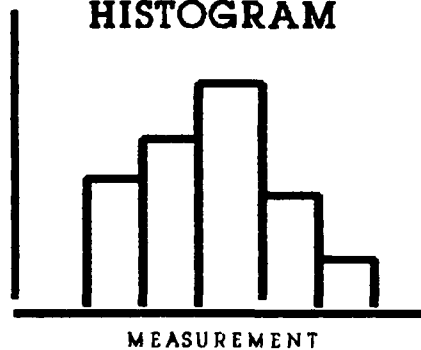
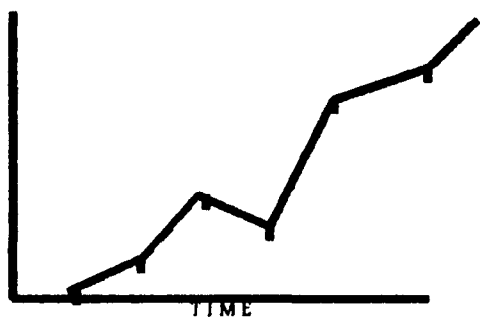
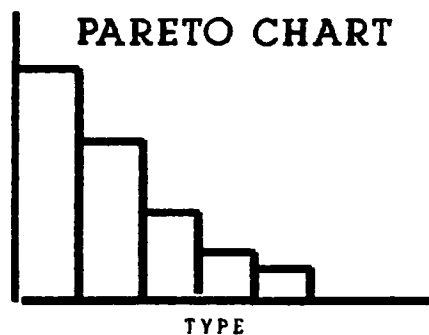
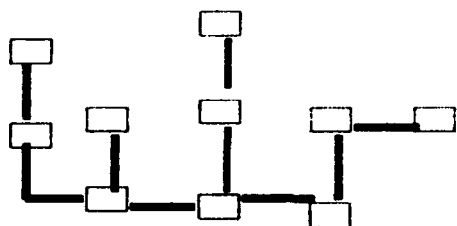
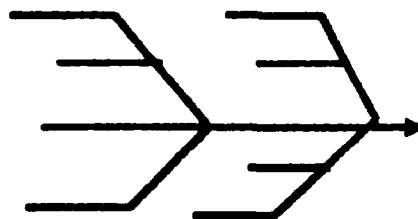
FIGURE 2

THE SHEWHART CYCLE



ADOPTED FROM 'OUT OF CRISIS'
BY W. EDWARDS DEMING, 1986

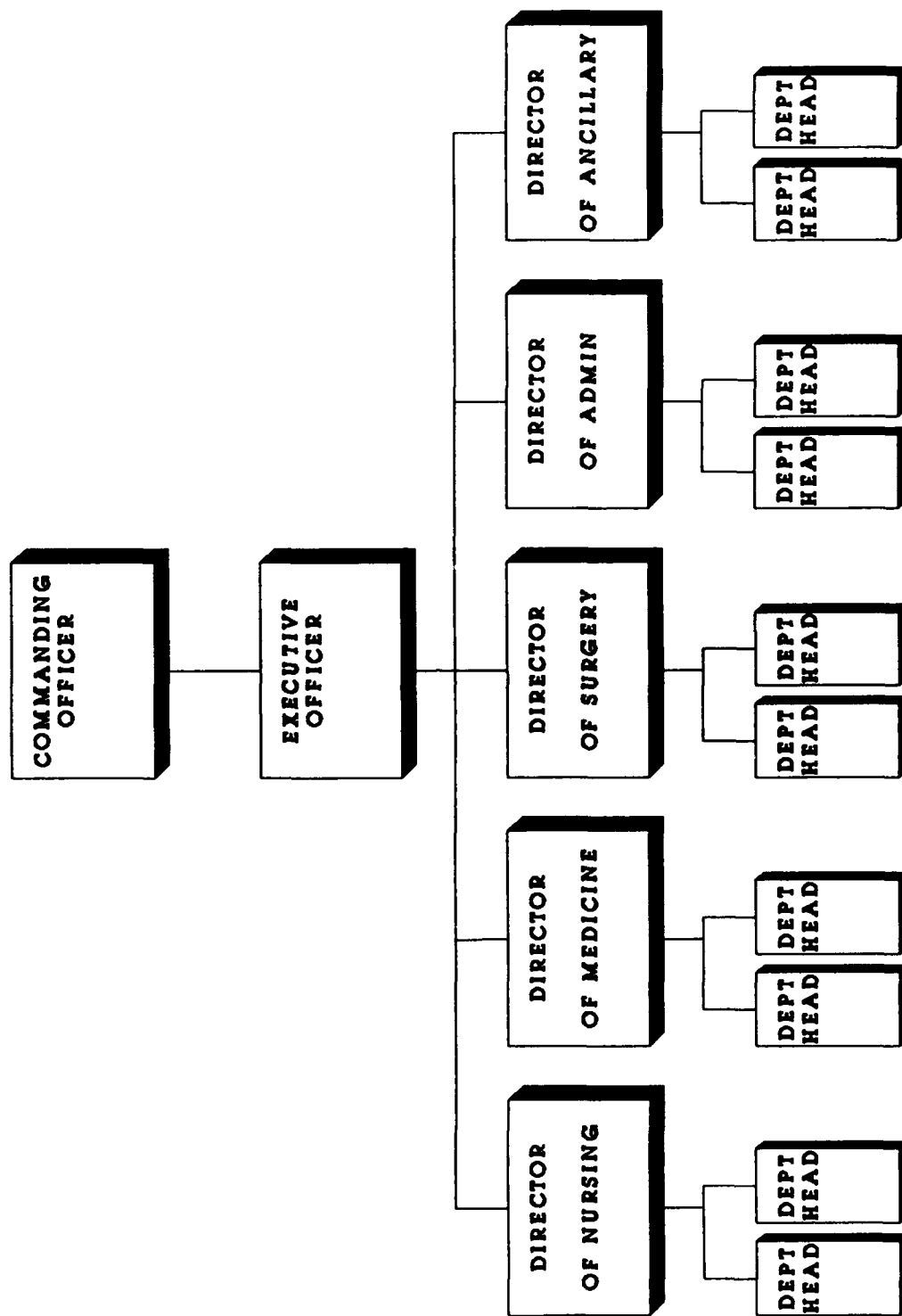
SEVEN BASIC GRAPHIC TOOLS



Adopted from "The Deming Management Method"
by Mary Walton, 1986

FIGURE 4

NAVAL HOSPITAL CAMP PENDLETON



ORGANIZATIONAL CHART

FIGURE 5

ORGANIZATIONAL STRUCTURE FOR TOTAL QUALITY LEADERSHIP

